

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number  
**WO 2005/052366 A3**

(51) International Patent Classification<sup>7</sup>: **A61M 1/00**

(21) International Application Number:  
**PCT/US2004/038937**

(22) International Filing Date:  
22 November 2004 (22.11.2004)

(74) Agents: KELBER, Steven, B. et al.; Piper Rudnick LLP, 1200 19th Street, N.W., Washington, DC 20036 (US).

(25) Filing Language: English

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

(30) Priority Data:  
60/523,321 20 November 2003 (20.11.2003) US

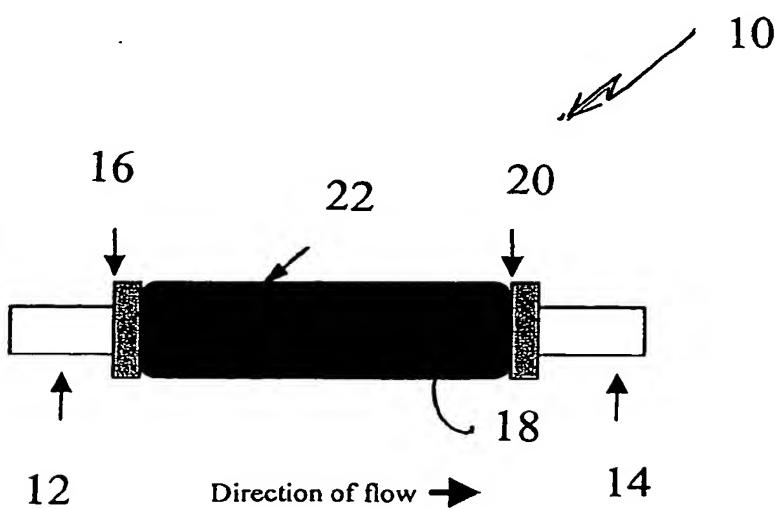
(71) Applicant (for all designated States except US): THE HENRY M. JACKSON FOUNDATION FOR THE ADVANCEMENT OF MILITARY MEDICINE, INC. [US/US]; 1401 Rockville Pike, Suite 600, Rockville, MD 20852 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ALAM, Hasan

[Continued on next page]

(54) Title: PORTABLE HAND PUMP FOR EVACUATION OF FLUIDS



BEST AVAILABLE COPY

WO 2005/052366 A3

(57) Abstract: A manually operable pump (10) for the effective removal of fluids to include blood, blood clots, fluid, and air from a body cavity of a subject is provided. The manually operable pump is adapted to be connect to a range of fluid conduits (12, 14) and is equipped with one-way valves (16, 20) that effectively permit flow of fluid through the pump in only one direction. The sensitivity of the one-way valves is such that when properly positioned, fluid can flow through the valves (16, 20) and out of the pump (10) without manual compression of the pump and with the aid of gravity power alone.



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:  
25 August 2005

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*